TOPEX/POSEIDON Mission
Global Measurements of Sea Level at Unprecedented Accuracy

Charles A. Yamarone, Jr,
Edward J. Christensen
Lee-Lueng Fu

Jet Propulsion Laboratory
California Institute of Technology
Pasadena, California 91109

This paper describes the TOPEX/POSEIDON Mission, a joint project between the United States and France with particular emphasis on measurement capabilities and performance. The satellite has provided unprecedented measurements of global sea level since it was launched on 10 August 1992 from Kourou, French Guiana with an Arianespace 42P launch vehicle. TOPEX/POSEIDON is comprised of two microwave radar altimeters, a microwave radiometer, and three precision tracking systems which combine to produce an overall global sea level measurement of less than 6 cm. The accuracy' of the measurement is attributed to the design and implementation of; the satellite and its instrument complement, the precision orbit determination and tracking system, the ground processing system, and the verification and calibration system. The satellite and measurement systems will be discussed, with an emphasis on the sensors, precision orbit determination process, and the verification process. In addition, current results provided by TOPEX/POSEIDON Science Investigators will be summarized.